

Appl. No. 10/605,520
Amdt. dated August 25, 2006
Reply to Office action of May 26, 2006

Amendments to the Claims:

1. (Currently amended) A method for controlling a hardware circuit with a processor, the processor used for executing a code to control the hardware circuit, the code comprising:

5 a plurality of lower-level subroutines, wherein after the processor executes various lower-level subroutines, the hardware circuit will be controlled to execute various corresponding operations, and each lower-level subroutine will record results, which come from the hardware circuit executing the corresponding operations, in an error code; wherein each result corresponds to a recovery operation;

10 a plurality of higher-level subroutines, each higher-level subroutines used for calling at least a lower-level subroutine to control the hardware circuit to execute operations corresponding to the lower-level subroutine according to the called lower-level subroutine when the processor ~~executes~~ executes the higher-level subroutine;

15 a plurality of recovery subroutines, each recovery subroutine corresponding to a recovery operations for controlling the hardware circuit to execute various corresponding recovery operations, after the processor executes various recovery subroutines; and

20 an error-handling subroutine for calling the recovery subroutines according to the error code;

the method comprising:

25 after the processor executes the higher-level subroutines, executing the error-handling subroutine to allow the processor to control the hardware circuit to ~~execute~~ execute the corresponding recovery operations according to the results corresponding to the lower-level subroutines.

2. (Currently amended) The method of claim 1, wherein when the processor executes the error-handling subroutine after the higher-level subroutines are executed, the

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processor will not ~~execute~~execute the recovery operations corresponding to the lower-level subroutine until the higher-level subroutines are finished.

3. (Original) The method of claim 1, wherein the higher-level subroutines won't call each other so that a next higher-level subroutine will not be executed until the processor finishes executing a previous higher-level subroutine.

4. (Original) The method of claim 1, wherein the hardware circuit is a servo module of an optical storage drive, the servo module comprising:
a motor for driving an optical disk to rotate; and
a pick-up head for generating a laser incident on the optical disk.

5. (Original) The method of claim 1, wherein the hardware circuit is an interface module of an optical storage drive.

6. (Original) The method of claim 1, wherein the error code is a global variable of the code; the operation results corresponding to the lower-level subroutines will be recorded in the same error code.

7. (Currently amended) The method of claim 1, wherein the code further comprises a plurality of next-level subroutines; when the processor executes various next-level subroutines, the hardware circuit is controlled to execute corresponding operations; each next-level ~~subroutines~~ subroutine will record operation results corresponding to the hardware ~~circuit~~ circuit in a second error code; each lower-level subroutine is used for calling at least a next-level subroutine so that the processor sequentially executes the next-level subroutines of the lower-level subroutines to control the hardware circuit to execute corresponding operations when executing the lower-level subroutines.

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8. (Original) The method of claim 7, wherein the next-level subroutines of each lower-level subroutine record corresponding operation results in the same second error code.
- 5 9. (Original) The method of claim 7, wherein the second error code is a column of the error code.
10. (Original) The method of claim 7, wherein the next-level subroutines record corresponding operation results in the same second error code.
- 10 11. (canceled)
12. (Original) The method of claim 1, wherein the lower-level subroutines won't call each other so that a next lower-level subroutine will not be executed until the processor
- 15 finishes executing a previous lower-level subroutine.
13. (Original) The method of claim 1, wherein the lower-level subroutines won't call the higher-level subroutines.
- 20 14. (Currently amended) An electronic device, comprising:
a hardware circuit for achieving operations of the electronic device;
a processor for executing a code to control the hardware circuit;
a storage device for storing the code; wherein the code ~~comprising~~ comprises:
a plurality of lower-level subroutines, wherein after the processor executes various
- 25 lower-level subroutines, the hardware circuit will be controlled to execute various corresponding operations, and each lower-level subroutine will record results, which come from the hardware circuit executing the corresponding operations, in an error code; wherein each result corresponds to a recovery

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operation;
a plurality of higher-level subroutines, each higher-level ~~subroutines~~ subroutine
used for calling at least a lower-level subroutine to control the hardware circuit
to execute operations corresponding to the lower-level subroutine according to
5 the called lower-level subroutine when the processor executes the higher-level
subroutine;
a plurality of recovery subroutines, each recovery subroutine corresponding to a
recovery operations for controlling the hardware circuit to execute various
corresponding recovery operations, after the processor executes various
10 recovery subroutines; and
an error-handling subroutine for calling the recovery subroutines according to the
error code;
wherein after executing the higher-level subroutines, the processor executes the
error-handling subroutine to allow the processor to control the hardware circuit to
15 execute the corresponding recovery operations according to the results corresponding
to the lower-level subroutines.

15. (Currently amended) The electronic device of claim 14, wherein when the processor
executes the error-handling subroutine after the higher-level subroutines are executed, the
20 processor will not ~~executes~~ execute the recovery operations corresponding to the
lower-level subroutine until the higher-level subroutines are finished.

16. (Original) The electronic device of claim 14, wherein the higher-level subroutines
won't call each other so that a next higher-level subroutine will not be executed until the
25 processor finishes executing a previous higher-level subroutine.

17. (Original) The electronic device of claim 14 being an optical storage drive, the
hardware circuit comprising a servo module, which comprising:

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a motor for driving an optical disk to rotate; and
a pick-up head for generating a laser incident on the optical disk.

18. (Original) The electronic device of claim 14 being an optical storage drive, the
5 hardware circuit being an interface module of the optical storage drive.

19. (Original) The electronic device of claim 14, wherein the error code is a global
variable of the code; the operation results corresponding to the lower-level subroutines
will be recorded in the same error code.

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20. (Currently amended) The electronic device of claim 14, wherein the code further
comprises a plurality of next-level subroutines; when the processor executes various
next-level subroutines, the hardware circuit is controlled to execute corresponding
operations; each next-level subroutines ~~subroutines~~ will record operation results
15 corresponding to the hardware ~~circuit~~ circuit in a second error code; each lower-level
subroutine is used for calling at least a next-level subroutine so that the processor
sequentially executes the next-level subroutines of the lower-level subroutines to control
the hardware circuit to execute corresponding operations when executing the lower-level
subroutines.

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21. (Original) The electronic device of claim 20, wherein the next-level subroutines of
each lower-level subroutine record corresponding operation results in the same second
error code.

22. (Original) The electronic device of claim 20, wherein the second error code is a
25 column of the error code.

23. (Original) The electronic device of claim 20, wherein the next-level subroutines

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record corresponding operation results in the same second error code.

24. (canceled)

5 25. (Original) The electronic device of claim 14, wherein the lower-level subroutines
won't call each other so that a next lower-level subroutine will not be executed until the
processor finishes executing a previous lower-level subroutine.

10 26. (Original) The electronic device of claim 14, wherein the lower-level subroutines
won't call the higher-level subroutines.